

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A driving system control device in a vehicle integrated control system organized in a hierarchical configuration such that operation is performed in a direction from an upper control hierarchy including a request of a driver to a lower control hierarchy including an actuator, said actuator operating a driving source and a transmission mechanism of a vehicle,

said driving system control device comprising:

a requested output calculation unit calculating a requested output for said driving source based on a parameter from the upper control hierarchy;

a target gear ration determination unit calculating a target gear ratio in said transmission mechanism based on a parameter from the upper control hierarchy;

a transmission control unit controlling said transmission mechanism; ~~and~~

a generated torque calculation unit calculating driving torque generated in said vehicle; and

~~said driving system control device outputting a signal to said upper control hierarchy and a signal to said lower control hierarchy~~

an availability calculation unit calculating availability of torque generated in the driving source and outputting the availability to the upper control hierarchy, based on a parameter from the lower control hierarchy.

2. (Canceled)

3. (Previously Presented) The driving system control device according to claim 1, wherein said requested output calculation unit includes a transfer efficiency compensation unit compensating transfer efficiency.

4. (Previously Presented) The driving system control device according to claim 1, wherein said generated torque calculation unit includes a transfer efficiency compensation unit compensating transfer efficiency.

5. (Previously Presented) The driving system control device according to claim 1, wherein

said transmission mechanism includes a torque converter, and

said requested output calculation unit performs inverse operation of torque to be generated in said driving source from the requested driving torque, using a torque converter inverse model.

6. (Original) The driving system control device according to claim 5, wherein said torque converter inverse model compensates response with respect to a motive power transfer system that is represented by a first-order lag and dead time.

7. (Previously Presented) The driving system control device according to claim 1, wherein

said transmission mechanism includes a torque converter, and

said requested output calculation unit uses a torque converter inverse model to perform inverse operation of the number of rotations to be caused in said driving source from a torque converter output rotation number that is calculated from a vehicle speed or a driving system output rotation number.

8. (Original) The driving system control device according to claim 7, wherein said torque converter inverse model compensates response with respect to a motive power transfer system that is represented by first-order lag and dead time.

9. (Previously Presented) The driving system control device according to claim 1, wherein said requested output calculation unit calculates the requested output taking account

of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

10. (Previously Presented) The driving system control device according to claim 1, wherein said generated torque calculation unit calculates generated torque taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

11. (Previously Presented) The driving system control device according to claim 1, wherein said requested output calculation unit calculates information for controlling at least two manipulation amounts, differing in response, to control said driving source.

12. (Previously Presented) The driving system control device according to claim 1, wherein said driving source is at least one of an engine and a driving motor.

13. (Currently Amended) A driving system control device in a vehicle integrated control system organized in a hierarchical configuration such that operation is performed in a direction from an upper control hierarchy including a request of a driver to a lower control hierarchy including an actuator, said actuator operating a driving source and a transmission mechanism of a vehicle,

said driving system control device comprising:

requested output calculation means for calculating a requested output for said driving source based on a parameter from the upper control hierarchy;

target gear ratio determination means for calculating a target gear ratio in said transmission mechanism based on a parameter from the upper control hierarchy;

transmission control means for controlling said transmission mechanism; ~~and~~

generated torque calculation means for calculating driving torque generated in said vehicle; and

~~said driving system control device outputting a signal to said upper control hierarchy
and a signal to said lower control hierarchy~~

an availability calculation means for calculating availability of torque generated in the
driving source and outputting the availability to the upper control hierarchy, based on a
parameter from the lower control hierarchy.

14. (Canceled)

15. (Previously Presented) The driving system control device according to claim 13,
wherein said requested output calculation means includes a transfer efficiency compensation
means for compensating transfer efficiency.

16. (Previously Presented) The driving system control device according to claim 13,
wherein said generated torque calculation means includes a transfer efficiency compensation
means for compensating transfer efficiency.

17. (Previously Presented) The driving system control device according to claim 13,
wherein

said transmission mechanism includes a torque converter, and

said requested output calculation means includes means for performing inverse
operation of torque to be generated in said driving source from the requested driving torque,
using a torque converter inverse model.

18. (Original) The driving system control device according to claim 17, wherein said
torque converter inverse model includes means for compensating response with respect to a
motive power transfer system that is represented by a first-order lag and dead time.

19. (Previously Presented) The driving system control device according to claim 13, wherein

said transmission mechanism includes a torque converter, and

said requested output calculation means includes means for performing inverse operation of the number of rotations to be caused in said driving source from a torque converter output rotation number that is calculated from a vehicle speed or a driving system output rotation number, using a torque converter inverse model.

20. (Original) The driving system control device according to claim 19, wherein said torque converter inverse model includes means for compensating response with respect to a motive power transfer system that is represented by first-order lag and dead time.

21. (Previously Presented) The driving system control device according to claim 13, wherein said requested output calculation means includes means for calculating the requested output taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

22. (Previously Presented) The driving system control device according to claim 13, wherein said generated torque calculation means includes means for calculating generated torque taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

23. (Previously Presented) The driving system control device according to claim 13, wherein said requested output calculation means includes means for calculating information for controlling at least two manipulation amounts, differing in response, to control said driving source.

24. (Previously Presented) The driving system control device according to claim 13, wherein said driving source is at least one of an engine and a driving motor.

25. (New) The driving system control device according to claim 1, wherein the generated torque calculation unit calculates a currently generated driving torque and a future generated driving torque based on an output of the lower control hierarchy, and outputs the currently generated driving torque and the future generated driving torque to the upper control hierarchy.

26. (New) The driving system control device according to claim 13, wherein the generated torque calculation means includes means for calculating a currently generated driving torque and a future generated driving torque based on an output of the lower control hierarchy, and outputs the currently generated driving torque and the future generated driving torque to the upper control hierarchy.